From:	Robotham, Michael - Honolulu, HI
To:	Patterson, Kaleo
CC:	Rolfes, Tony - Honolulu, HI; Hamayasu, Toru; Miyamoto, Faith
Sent:	4/21/2009 9:14:59 AM
Subject:	RE: Jaucus Soils..... Subsoil
Attachments:	Official Series Description - MAKIKI Series.pdf; Official Series Description - MOKULEIA Series.pdf

Hi Kaleo,

I'm glad that your session went well and that Tony was able to help.

Thanks for the interesting information about the sand layers you are finding further down (e.g. at Kawaihao). That makes sense from a geomorphological/soil formation perspective. This area was formed underwater as reef during higher sea level regimes, then a sand layer was created through erosion of that coral. The area was un-submerged due to a combination of island uplift and sea level fall. The exposed sand was then covered by ash and cinders from the post-erosional volcanic eruptions (Tantalus being the most recent, but there is the whole rest of the group along the south shore that are a bit older but still post-erosional -- Red Hill, Punchbowl, Diamond Head, Koko Head, Hanauma Bay, etc.) as well as alluvial materal washed down the valleys from the Koolau's. The soils described as the Makiki series developed in that ash and cinders mixed with/covered by these alluvial materials. I've attached what we call the OSD (Official Series Description) for your information (you can also search for the OSD for any soil series on this web site: http://ortho.ftw.nrcs.usda.gov/osd/osd.html).

As you can see on the OSD, the soil is only described to a depth of 54 inches. This is standard procedure (sometimes we go as deep as 72 inches, but seldom deeper than that -- 60 inches is typical) and relates to the original agricultural and "surface engineering" focus of the soil survey. As a consequence, subsurface layers as you describe below here in town are typically not captured in the soil survey except in cases like the Mokuleia series (OSD also attached) which is found up on North Shore and also in Ewa. In this series, the sand layer is within that upper 5-6 feet (in that case, it is documented as being as shallow as 16 inches in some places) and shows up as part of the description.

You might want to talk with the more geomorphologically oriented folks -- Ross Sutherland in the Geography Department at UH-Manoa comes to mind - as they can give you a better idea of the landscape forming processes and timelines for Oahu that I tried to describe above. That would likely provide a better clue as to where you are likely to find these sand layers at lower depths than are described in the soil survey.

Best of luck with this important project. Please do not hesitate to contact Tony and/or me if you have other questions or need additional information.

Mike

From: Patterson, Kaleo [mailto:kpatterson@honolulu.gov]
Sent: Tuesday, April 21, 2009 8:31 AM
To: Robotham, Michael - Honolulu, HI
Cc: Rolfes, Tony - Honolulu, HI; Hamayasu, Toru; Miyamoto, Faith
Subject: RE: Jaucus Soils..... Subsoil

Aloha and Mahalo,

Just want to report that the support and assistance on the soils training last Friday went very well. Archeologist Hal Hammet joined us with some excellent photos of surface and substrata jaucus soils... I presented basically the soils conservation resources....

Tony was extremely pleasant and very very helpful.....

Everyone and even some of the old Archeologist had not known where the name Jaucus came from. Also everyone is stuttering now trying to pronounce the name with a Spanish accent..... and other information we can link to the naming, history in Hawaii, be good to pass around, increase the awareness to Jaucus sands...

It's interesting, we are finding the jaucus sands, for instance in the Kawaiahao Church burials, as a 12" layer, under the Makiki

soil and another substrata of ash and cinder, and fill material, underlain with the coral...

Can the mapping detect, or identify substrata fill or areas of Jaucus sands below the makiki clay...and fill.... here in town or Kakaako...

Kaleo Patterson

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